

Self-Study Modules on Tuberculosis

1-5 Glossary

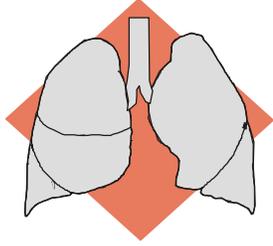
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention

National Center for HIV, STD, and TB Prevention
Division of Tuberculosis Elimination

Public Health Practice Program Office
Division of Media and Training Services

Atlanta, Georgia





Glossary 1-5

This glossary contains the new terms listed at the beginning of Modules 1-5.

acid-fast bacilli (AFB) – mycobacteria that stay stained even after they have been washed in an acid solution; may be detected under a microscope in a stained smear

adherence to treatment – following the recommended course of treatment by taking all the prescribed medications for the entire length of time necessary

administrative controls – guidelines for promptly detecting patients who have TB, placing them in an area away from other patients, giving them a diagnostic evaluation as soon as possible, and treating them if they are likely to have TB disease

adverse reaction – negative side effect resulting from the use of a drug (for example, hepatitis, nausea, headache)

AIDS – acquired immunodeficiency syndrome, a disease in which the immune system is weakened and therefore less able to fight certain infections and diseases; AIDS is caused by infection with the human immunodeficiency virus (HIV)

alveoli – the small air sacs of the lung that are at the end of the airway; when droplet nuclei reach these air sacs, TB infection begins

anergy – the inability to react to a skin test because of a weakened immune system, often caused by HIV infection or severe illness (see **anergy testing**)

anergy testing – giving skin tests using two substances other than tuberculin; done to determine whether a person is anergic. People who do not react to any of the substances, including tuberculin, after 48 to 72 hours (that is, people who have less than 3 millimeters of induration to all of the skin tests), are considered anergic.

bacteriologic examination – tests done in a mycobacteriology laboratory to diagnose TB disease; includes examining a specimen under a microscope, culturing the specimen, and doing drug susceptibility testing



baseline skin test – the tuberculin skin test given to employees or residents in certain facilities when they start their job or enter the facility (see **TB screening program** and **two-step testing**)

BCG – bacille Calmette-Guérin (BCG), a vaccine for TB disease that is used in many countries but rarely used in the United States; may cause a false-positive reaction to the tuberculin skin test

boosted reaction – a positive reaction to a tuberculin skin test, due to a boosted immune response from a skin test given up to a year earlier; occurs in people who were infected a long time ago and whose ability to react to tuberculin had lessened. Two-step testing is used in TB screening programs to tell the difference between boosted reactions and reactions caused by recent infection (see **booster phenomenon** and **two-step testing**)

booster phenomenon – a phenomenon in which people (especially older adults) who are skin tested many years after becoming infected with *M. tuberculosis* may have a negative reaction to an initial skin test, followed by a positive reaction to a skin test given up to a year later; this happens because the first skin test boosts the immune response. Two-step testing is used in TB screening programs to tell the difference between boosted reactions and reactions caused by recent infection (see **two-step testing**)

bronchoscopy – a procedure used to obtain pulmonary secretions or lung tissue with an instrument called a bronchoscope; used only when patients cannot cough up sputum on their own and an induced specimen cannot be obtained

case rate – the number of cases that occur during a certain time period, divided by the size of the population during that time period; the case rate is often expressed in terms of a population size of 100,000 persons

case reporting – informing the state or local health department when a new case (an occurrence) of TB disease has been diagnosed or is suspected

cavity – a hollow space within the lung, visible on a chest x-ray, that may contain many tubercle bacilli; often occurs in people with severe pulmonary TB disease

clinical evaluation – an evaluation done to find out whether a patient has symptoms of TB disease or is responding to treatment; also done to check for adverse reactions to TB medications

clinician – a physician, physician assistant, or nurse



close contacts – people who spend time with someone who has infectious TB disease

colonies – groups of mycobacteria that have grown in a culture

contact investigation – a procedure for interviewing a person who has TB disease to determine who may have been exposed to TB. People who have been exposed to TB are screened for TB infection and disease.

continuation phase – the period after the first 8 weeks of treatment, during which tubercle bacilli that remain after the initial phase are killed

corticosteroid – a type of steroid, either natural or man-made, often used to treat arthritis or certain allergies

cough-inducing procedures – procedures that make a patient cough, such as sputum induction, bronchoscopy, and the administration of aerosolized pentamidine

culture – organisms grown on media (substances containing nutrients) so that they can be identified; a positive culture for *M. tuberculosis* contains tubercle bacilli, whereas a negative culture contains no detectable tubercle bacilli

daily regimen – a treatment schedule in which the patient takes a dose of each prescribed medication every day

diabetes mellitus – a disease in which the body's ability to use sugar is weakened

diagnostic evaluation – an evaluation used to diagnose TB disease; includes a medical history, a chest x-ray, the collection of specimens for bacteriologic examination, and possibly a tuberculin skin test

directly observed therapy (DOT) – a strategy devised to help patients adhere to treatment; means that a health care worker or another designated person watches the TB patient swallow each dose of the prescribed drugs

droplet nuclei – very small droplets (1 to 5 microns in diameter) that may be expelled when a person who has infectious TB coughs or sneezes; they can remain suspended in the air for several hours, depending on the environment

drug injection – using a needle and syringe to inject drugs into the body



drug susceptibility pattern – the list of drugs to which the strain of tubercle bacilli is susceptible and to which it is resistant

engineering controls – engineering systems used to prevent the transmission of TB in health care facilities, including ventilation, high-efficiency particulate air (HEPA) filtration, and ultraviolet germicidal irradiation

epidemiology – the study of the distribution and causes of disease and other health problems in different groups of people

erythema – redness around the site of the injection when a Mantoux skin test is done; erythema is not considered when the reaction size is measured, because redness does not indicate that a person has TB infection

ethambutol – a drug used to treat TB disease; may cause vision problems. Ethambutol should not be given to children who are too young to be monitored for changes in their vision.

exposure to TB – time spent with someone who has infectious TB disease

extrapulmonary TB – TB disease that occurs in places other than the lungs, such as the lymph nodes, the pleura, the brain, the kidneys, or the bones; most types of extrapulmonary TB are not infectious

false-negative reaction – a negative reaction to the tuberculin skin test in a person who has TB infection; may be caused by anergy, recent infection (within the past 10 weeks), or very young age (younger than 6 months old)

false-positive reaction – a positive reaction to the tuberculin skin test in a person who does not have TB infection; may be caused by infection with nontuberculous mycobacteria or by vaccination with BCG

foreign-born persons – people born outside of the United States; foreign-born persons from areas of the world where TB is common (for example, Asia, Africa, Latin America, and the Caribbean) are more likely to become exposed to and infected with TB

gastric washing – a procedure done by inserting a tube through the patient's nose and passing it into the stomach; may be useful for obtaining sputum from children, who produce little or no sputum when they cough



health care facilities – places where people receive health care, such as hospitals or clinics

HEPA filters – special filters that can be used in ventilation systems to help remove droplet nuclei from the air

hepatitis – damage to the liver, causing symptoms such as nausea, vomiting, abdominal pain, fatigue, and dark urine; hepatitis can be caused by several drugs used to treat TB infection or disease

HIV – human immunodeficiency virus, the virus that causes AIDS

immune system – cells and tissues in the body that protect the body from foreign substances

immunosuppressive therapy – therapy that suppresses, or weakens, the immune system

induced sputum – sputum that is obtained by having the patient inhale a saline (salt water) mist, causing the patient to cough deeply; this procedure is used to help patients cough up sputum if they cannot do so on their own

induration – swelling that can be felt around the site of injection after a Mantoux skin test is done; the reaction size is the diameter of the indurated area (excluding any redness), measured across the forearm

infection control procedures – measures to prevent the spread of TB

infectious – capable of spreading infection; a person who has infectious TB disease expels droplets containing *M. tuberculosis* into the air when he or she coughs or sneezes

infiltrate – a collection of fluid and cells in the tissues of the lung; visible on a chest x-ray in people with pulmonary TB disease

initial phase – the first 8 weeks of treatment, during which most of the tubercle bacilli are killed

intermittent regimen – a treatment schedule in which the patient takes each prescribed medication two or three times weekly at the appropriate dosage

isolate – a group of organisms isolated, or separated, from a specimen; in an *M. tuberculosis* isolate, the organisms have been identified as *M. tuberculosis* (a positive culture for *M. tuberculosis*)



isolation room – a room with special characteristics to prevent the spread of droplet nuclei expelled by a TB patient, including negative-pressure ventilation

isoniazid – the drug that is most often used for preventive therapy and also used to treat TB disease; although relatively safe, it may cause hepatitis and other adverse reactions in some patients

liver function tests – tests done to detect damage to the liver

malaise – a feeling of general discomfort or illness

Mantoux tuberculin skin test – the preferred method of testing for TB infection; done by using a needle and syringe to inject 0.1 ml of 5 tuberculin units of liquid tuberculin between the layers of the skin (intradermally), usually on the forearm; the reaction to this test, usually a small swollen area (induration), is measured 48 to 72 hours after the injection and is classified as positive or negative depending on the size of the reaction and the patient's risk factors for TB

media – substances containing special nutrients for growing cultures of bacteria found in specimens

medical history – the part of a patient's life history that is important for diagnosing and treating TB infection or disease, including history of exposure, symptoms, diagnosis of TB infection or disease, and risk factors for TB disease

miliary TB – TB disease that occurs when tubercle bacilli enter the bloodstream and are carried to all parts of the body, where they grow and cause disease in multiple sites; the chest x-ray of patients with miliary TB often looks like millet seeds scattered throughout the lung

multidrug-resistant TB (MDR TB) – TB that is resistant to isoniazid and rifampin; more difficult to treat than drug-susceptible TB

multiple-puncture test – tuberculin skin test done by puncturing the skin of the forearm with a set of short prongs or tines to inject tuberculin (for example, Tine test); although easy to give and convenient, these tests are not accurate and should not be used to determine whether a person has TB infection

mycobacteria – a kind of bacteria; mycobacteria can cause a variety of diseases



mycobacteriology laboratory – a laboratory that deals specifically with *M. tuberculosis* and other mycobacteria

Mycobacterium africanum – a type of tuberculous mycobacteria, closely related to *M. tuberculosis*, that can cause a disease similar to TB in humans; it is very rare in the United States

Mycobacterium avium complex – a common type of nontuberculous mycobacteria that can cause disease in humans

Mycobacterium bovis – a type of tuberculous mycobacteria that can cause a disease similar to TB in cows. Before the pasteurization of milk became common practice, these mycobacteria were often spread to humans through contaminated milk; in the United States today, *M. bovis* rarely affects humans

Mycobacterium tuberculosis – the organism that causes TB and is sometimes called the tubercle bacillus; belongs to a group of bacteria called mycobacteria

negative pressure – a ventilation system designed so that air flows from the corridors into an isolation room, ensuring that contaminated air cannot escape from the isolation room to other parts of the facility

nontuberculous mycobacteria – mycobacteria that do not cause TB disease and are not usually spread from person to person; one example is *M. avium complex*

pathogenesis – how an infection or disease develops in the body

peripheral neuropathy – damage to the sensory nerves of the hands and feet, causing a tingling sensation or a weakened sense of touch in the hands and feet

personal respirators – special masks designed to filter out droplet nuclei; used in health care facilities and other settings where TB may be spread

PPD skin test – a tuberculin skin test (see **purified protein derivative [PPD]**)

preventive therapy – medication that is given to people who have TB infection to prevent them from developing TB disease

pulmonary TB – TB disease that occurs in the lungs (about 85% of all U.S. cases), typically causing a cough and an abnormal chest x-ray; pulmonary TB is usually infectious if untreated



purified protein derivative (PPD) – the type of tuberculin used in the Mantoux skin test

pyrazinamide – a drug used to treat TB disease, usually during the initial phase of treatment; should not be given to pregnant women

relapse – the return of a disease after a partial recovery from the disease

residential facilities – institutions where people live, such as nursing homes, correctional facilities, or homeless shelters

resistant – able to grow in the presence of a particular drug

rifampin – a drug used to treat TB disease; also used for preventive therapy in people with a positive skin test reaction who have been exposed to isoniazid-resistant TB. Rifampin has several possible side effects (for example, hepatitis, turning body fluids orange, drug interactions).

silicosis – a lung disease caused by inhaling silica dust, which is used in the production of glass and ceramics; occurs most often in mining and foundry workers

skin test conversion – a change in a skin test reaction from negative to positive between screening intervals

smear – a specimen that has been smeared onto a glass slide, stained, washed in an acid solution, and then placed under the microscope for examination; used to detect acid-fast bacilli in a specimen

sputum – phlegm from deep in the lungs, collected in a sterile container for processing and examination

streptomycin – an injectable drug used to treat TB disease; may cause hearing problems. Streptomycin should not be given to pregnant women.

susceptible – able to be killed by a particular drug

symptoms of TB disease – conditions caused by TB disease. The symptoms of pulmonary TB disease include coughing, pain in the chest when breathing or coughing, and coughing up sputum or blood. The general symptoms of TB disease (pulmonary or extrapulmonary) include weight loss, fatigue, malaise, fever, and night sweats. The symptoms of extrapulmonary TB disease depend on the part of the body that is affected by the disease



TB screening program – a program in which employees and residents of a facility are periodically given tuberculin skin tests; done to identify people who have TB infection and possibly TB disease and to determine whether TB is being transmitted in the facility

transmission – the spread of an organism, such as *M. tuberculosis*, from one person to another; depends on the contagiousness of the patient, the type of environment, and the length of exposure

tubercle bacilli – another name for *Mycobacterium tuberculosis* organisms, which cause TB disease

tuberculin – protein derived from tubercle bacilli that have been killed by heating; used to determine whether a person has TB infection. Tuberculin is not a vaccine.

tuberculin skin test – a test used to detect TB infection (see **Mantoux tuberculin skin test** or **multiple-puncture test**)

tuberculin unit – a standard strength of tuberculin used in the United States and Canada; a strength of 5 tuberculin units is used for the Mantoux tuberculin skin test

tuberculous mycobacteria – mycobacteria that can cause TB disease or other diseases very similar to TB; the tuberculous mycobacteria are *M. tuberculosis*, *M. bovis*, and *M. africanum*

two-step testing – a strategy used in TB screening programs to distinguish a boosted reaction (caused by TB infection that occurred many years before the skin test) from a reaction caused by recent infection. If a person has a negative reaction to an initial skin test, a second test is given 1 to 3 weeks later; a positive reaction to the second test probably represents a boosted reaction, not recent infection. Two-step testing is used in many TB screening programs for skin testing employees when they start their job.

ultraviolet germicidal irradiation – the use of special lamps that give off ultraviolet light, which kills the tubercle bacilli contained in droplet nuclei

ventilation systems – air systems designed to maintain negative pressure and to exhaust the air properly; designed to minimize the spread of TB in a health care facility